IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventor:	Michael Popovsky
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MS Amendment
Commissioner for Patents
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Declaration of Eric Jungermann Pursuant to 37 C.F.R. § 1.132

I, Eric Jungermann, Ph.D. hereby declare that:

1. This declaration is submitted pursuant to 37 C.F.R. § 1.132 for consideration by the U.S. Patent and Trademark Office in connection with the above application.

2. I received a Ph.D. in Organic Chemistry from Polytechnic University (Brooklyn, NY) in 1957. My professional career has focused on chemical research and product development in the soap and personal care industry. From 1957 – 1959, I was Section Head, Fatty Acid Research at Armour Industrial Chemical Co. From 1959 – 1965, I was Manager of Research in Armour's Soap Division. From 1965 – 1976, I was Technical Director and later Vice President of Research & Development at Armour-Dial, Inc. In 1976, I left Armour-Dial to become Director of Corporate Development at Helene Curtis, Inc., maker of "Suave" and "Finesse" brands. Two years later, in 1978, I became President of Jungermann Associates, a position in which I continue to serve. From 1982 - 1992, I also served as Senior Technical Vice President for Neutrogena Corporation.

3. I am an inventor on 30 granted US and numerous related international patents. I have edited two books – Cationic Surfactants (Marcel Dekker, 1970) and Glycerine: A Key Cosmetic Ingredient (Marcel Dekker, 1991) – as well as contributed to five book chapters. Among these publications are chapters on soap technology and fat-based surface active agents, both in Bailey's Industrial Fat and Oil Products (4th ed., J. Wiley

& Sons, 1979). For nearly fifteen years, I served as an editor of the Journal of the American Oil Chemists' Society. I am also a series editor of the Cosmetic Science and Technology Series published by Marcel Dekker. (To date, 31 books have been published in this series.) In addition, I have made many technical presentations to professional societies including the American Oil Chemists' Society, the Soap & Detergent Association, and the Society of Cosmetic Chemists, as well as published numerous articles in scientific journals.

4. I am a co-inventor of the personal cleansing device claimed in the present application, Serial No. 10/562,311, later published as US 2006/0282966 A1. I have read the amended claims that I understand will be submitted together with this declaration.

5. The term "soap" is understood by persons of skill in the art of soap making technology to mean the alkali salts (sodium or potassium) of mixed fatty acids. The mixed fatty acids are derived from a variety of fats and oils, such as tallow, coconut oil, palm oil, palm kernel oil and olive oil. More particularly, these fats and oils are triglycerides, containing a mixture of up to three fatty acids bound to a single molecule of glycerine. The triglycerides are typically straight-chain, unsaturated or saturated, carbon compounds having from about ten to about twenty carbon atoms.

6. A first common method for soap making is to combine fats and/or oils with a solution of caustic soda (sodium hydroxide or lye) or potash (potassium hydroxide) in a specific amount to cause saponification, the breakdown of the fats and/or oils into their component fatty acids and glycerine. The crude mixture is then purified by a salting out process to form a "neat soap" that is then dried. A second method of soap making uses a fat splitter column, a device which employs steam to force fatty acids to come out of the top of the column and glycerine and water out of the bottom. The crude fatty acids are then purified by distillation and neutralized with caustic soda to form the neat soap that is then dried. The neat soap is then compacted into small, solid pellets having a moisture content of about 10% to 20%. These pellets are processed into soap bars.

7. Pourable soaps are produced from fats and oils without removal of the liberated glycerine. They are mixtures of soaps (as described above in Paragraphs 5 and 6) to which additives, including additional glycerine, sugars, glycols, small amounts of certain

surfactants, and/or alcohol are added. The added ingredients provide the pourability and meltability properties described in Paragraph 8 below.

8. Pourable soaps are solid at temperatures of less than about 120°F. When heated above about 120°F – generally from about 120°F to about 160°F – pourable soaps melt and become liquid. When cooled below this melting point range, pourable soaps are reconstituted in solid form without having undergone significant changes in composition. In contrast, regular soap pellets (as described in Paragraphs 5 and 6 above) do not melt at elevated temperatures; instead, they decompose, char or burn.

9. Pourable soaps (described in Paragraphs 7 and 8) and regular soap pellets (described in Paragraphs 5 and 6) both foam well in soft water, but do not foam to any significant extent in hard water.

10. The personal cleansing devices of the present application – as described in the amended claims – are directed to sponges infused with a particular type of pourable soap, one containing at least two sodium soaps and glycerine (from 5 to 35%). These devices have a property that, in my experience, has not been previously achieved. Surprisingly, the personal cleansing devices of the present invention – a sponge (or similar web of fibers) infused with pourable soap – produces foam in both soft and hard water.

11. This surprising property – the ability of the personal cleansing device of the present invention to produce foam in both hard and soft water, but the absence of foaming to any significant extent in hard water from a pourable soap alone – was demonstrated by a test conducted by an independent laboratory at my instruction based on a procedure published by Drozd *et al.* in Cosmetic & Toiletries, Vol 112, No.8, pg. 55, August 1997. This foam test is described in Paragraphs 12, 13 and 18 – 20 of this Declaration.

12. A first pourable soap as described in the amended claims having the following composition was prepared according to the process set out in paragraphs [0055] and [0056] of US 2006/0282966 A1:

Aqua	36.30
Glycerine	23.50

Sodium Cocoate	16.70
Sodium Stearate	11.90
Sorbitol	10.50
Sodium Oleate	1.10
Coconut Oil	0.60
Stearic Acid	0.36
Olea Europea (Olive) Fruit Oil	0.04

13. A second pourable soap as described in the amended claims having the following composition was prepared according to the same process as in Paragraph 12:

Triethanolamine	30%
Glycerine	8%
Palm Oil	28%
Coconut Oil	7%
Cocoamide DEA	1.5%
Stearic Acid	10%
Caustic Soda	q.s.

14. I understand that claim 92 is directed to a pourable soap that contains two sodium soaps generated from fatty acids of oils selected from the group of palm oil, palm kernel oil, coconut oil, olive oil, castor oil, and safflower oil. The pourable soap in Paragraph 12 of this declaration contains two such sodium soaps – sodium cocoate and sodium oleate. The pourable soap in Paragraph 12 also contains glycerine at a concentration of 23.50-wt%, within the range recited in claim 92. Additionally, the pourable soap in Paragraph 12 has a melting point within the range 120°F to 160°F.

15. The pourable soap in Paragraph 13 of this declaration likewise contains two sodium soaps – sodium palmitate and sodium cocoate – derived, respectively, from the palm oil and coconut oil. This pourable soap also contains glycerine at a concentration of 8.0-wt%, within the range of recited in claim 92. Additionally, the pourable soap in Paragraph 13 has a melting point within the range 120°F to 160°F. (The 10% stearic acid in this formulation serves two purposes: first, it neutralizes any excess caustic soda; second, it acts as a superfatting agent.)

16. Amended claims 13 – 19 have the same characteristics of claim 92 (two sodium salts, glycerine from 5% to 35%, melt point from 120ºF to 160ºF), and additional requirements. The pourable soaps described in Paragraphs 12 and 13 of this declaration meet these requirements.

17. "Soft water" is understood by persons having skill in the art as having as *de minimus* amounts of divalent salts (*i.e.*, of Calcium or Magnesium). In contrast, "hard water" is understood in the personal care arts as water containing at least about 150 ppm of a divalent salt.

18. The following procedure was used to test foaming of the pourable soaps described in Paragraphs 12 and 13 above.

a. A five percent (5%) solution of the pourable soap was preparing by dissolving 5 grams of soap in 100 ml of distilled water.

b. In a 250 ml measuring cylinder, 5 ml of the 5% pourable soap solution and 0.5 ml of olive oil was added to either (i) 100 ml of soft water (containing ~0 ppm of a divalent salt) or (ii) 100 ml of hard water (having ~300 ppm of a divalent salt).

c. The final volume of the measuring cylinder in step (b) was adjusted to 125 ml with the appropriate water (soft or hard).

d. The measuring cylinder was then capped and agitated by gently inverting the cylinder ten times over a period of 25 seconds. After agitation, the cylinder was allowed to stand for about five seconds.

e. Foam height was then measured as the height of foam observed after agitation (in ml) minus 125 ml.

19. The following procedure was used to test foaming of personal cleansing device of the present invention infused with the pourable soaps described in Paragraphs 12 and 13 above.

a. Approximately 20 ml of soft water (~0 ppm of divalent salt) or 20 ml of hard water (300 ppm of divalent salt) was added to a 100 ml measuring cylinder.

b. 8 grams of personal cleansing device (sponge infused with the pourable soap) was cut into small pieces and added to the cylinder in step (a).

c. 0.5 ml of olive oil was added to the cylinder in step (b).

d. The measuring cylinder was filled to a final volume of 50 ml with water of the appropriate hardness (or softness).

e. The measuring cylinder in step (d) was capped and the contents were agitated by gently inverting the cylinder ten times over a period of 25 seconds.

f. Foam height was then measured as the height of foam observed after agitation (in ml) minus 50 ml.

20. The following foam heights were measured:

	Foam Height in Soft Water (0 ppm)	Foam Height in Hard Water (300 ppm)
Pourable Soap (¶12) Alone	40 ml	1 ml
Cleansing Device of Present Pourable Soap (¶12) Infused in Sponge Invention	45 ml	40 ml
Pourable Soap (¶13) Alone	85 ml	1 ml
Cleansing Device of Present Pourable Soap (¶13) Infused in Sponge Invention	80 ml	20 ml

21. I declare that all statements made herein of my knowledge are true and all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of any patents that may mature from the present application.

Further Declarant says not.

Dated this 7 day of June 2010

Eric Jungermann, Ph.D.

[illegible]